

**PRODUCTION WELL SURVEY: SUPPLEMENTAL WELL  
INFORMATION FOR INITIAL REMEDIAL DESIGN WORK**

**ADDITIONAL PRODUCTION WELLS AND OTHER WELLS OF  
RECORD IN THE VICINITY OF THE DUAL SITE  
GROUNDWATER MODEL DOMAIN**

**Joint Montrose Chemical and Del Amo Superfund Sites  
Los Angeles County, California**

**DIN: DSGWRD 0936-009**

*Prepared for:*

**SHELL OIL COMPANY**

*Prepared by:*

**URS**

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June 4, 2004

## Shell Oil Company



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June 4, 2004

Via FedEx

Jeffrey A. Dhont  
Remedial Project Manager  
U.S. Environmental Protection Agency, Region IX  
Mail Stop SFD-7-1  
75 Hawthorne Street  
San Francisco, CA 94105-3901

RE: Unitateral Administrative Order (UAO): U.S. EPA Docket No. 2003-08  
Production Well Survey: Supplemental Well Information  
For Initial Remedial Design Work  
Additional Production Wells and Other Wells of Record  
In the Vicinity of the Dual Site Groundwater Model Domain  
Joint Montrose Chemical and Del Amo Superfund Sites  
Los Angeles County, California  
DIN: DSGWRD 0936-009

Dear Mr. Dhont:

Please find enclosed three copies of the above-referenced report. If you have any questions regarding this report, please contact John Dudley, URS Corporation, at (805) 964-6010, ext. 317.

Sincerely,

*Niki M. Pasvantis* /s/ NMP

Niki M. Pasvantis  
Del Amo Project Manager

Enclosure

cc w/Enclosure: Safouh Sayed, DTSC  
Frank Gonzalez, DTSC  
Richard Coffman, DTSC  
Natasha Raykhman, CH2M Hill (2)  
Mike Palmer, Hargis + Associates

**Production Well Survey:  
Supplemental Well Information For Initial Remedial Design Work  
Additional Production Wells and Other Wells of Record  
In the Vicinity of the Dual Site Groundwater Model Domain  
Joint Montrose Chemical and Del Amo Superfund Sites  
Los Angeles County, California**

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## **1.0 Introduction**

Presented in this brief report is information acquired for production wells and other wells of record that are (or were) located within or adjacent to the area of the dual site groundwater modeling domain. Information in this report supplements information previously compiled by Hargis + Associates as presented in their report: (Hargis + Associates, 2004). As requested by EPA in a 2/13/04 email (EPA, 2004) with subject *EPA Direction to Shell With Regard to Production Well Survey and Compilation of Other Sources Report*, we have attempted to compile information:

- 1) *for any production wells which may exist within areas of the former Del Amo plant, and to the east and north of the former Del Amo Plant, within the modeling domain, and for*
- 2) *production wells not evaluated by Montrose (in Hargis + Associates, 2004) at the reaches of the modeling domain on the west, south, and east of the domain (either inside or just outside the domain).*

## **2.0 Well Survey Results**

Information was acquired and compiled from the Water Replenishment District of Southern California (WRD) for a total of thirteen wells. Six of these well sites are located along the NE, SE and SW boundaries of the modeling domain and were plotted on the production well map provided as an attachment to a 2/12/04 email from CH2M Hill (CH2M Hill, 2004). It is noted that several of these six wells were incorrectly located on the email attachment, including well ID 3S13W31M01 that was plotted within the area of the former rubber plant site. These wells are shown in their correct locations with respect to the Del Amo site and the boundaries of the Dual Site groundwater model domain on Figure 1 in this report. Information was also acquired and compiled for seven additional wells not plotted on CH2M Hill's map, at three locations just outside and to the north of the modeling domain. Five of these wells are co-located as a monitoring well cluster (Gardena 2 Cluster) maintained by WRD.

The information we have compiled is presented in a series of tables attached to this memo. Table 1 summarizes the basic information acquired for each well including:

California State Well Identification Number, owner, year constructed, whether a well log is available (and where), X and Y coordinates, reference point elevation, total depth, screened interval, source aquifer, use and status, and whether various types of well data are available. Table 2 presents available water level data and well production data; and, Table 3 summarizes water quality data for the five wells located at the Gardena 2 Cluster. We have requested water quality data from WRD for any of the production wells documented in this report. Any water quality data from WRD will be forwarded to EPA and CH2M Hill on request.

The locations of the wells and well cluster with respect to the boundaries of the Dual Site groundwater model domain are shown on the attached Figure 1. It is noted that we found no record that any production wells had ever existed within the area of the former rubber plant site. We also note that the water supply for the former rubber plant complex was from the City of Los Angeles' public water supply system.

### 3.0 References

- CH2M Hill, 2004. Email dated 02/12/04 with attachment from Natasha Raykhman to Jeff Dhont and John Dudley, Subject: Production Wells in the Vicinity of the Site with 1995 Production.
- EPA, 2004. Email dated 02/13/04 from Jeff Dhont to Niki Pasvantis and John Dudley, Subject: EPA Direction to Shell With Regard to Production Well Survey and Compilation of Other Sources Report.
- Hargis + Associates, 2004. *Production Well Survey Report For Remedial Design Work Montrose Site, Torrance, California, DSGWRD 0926-009*, prepared for Montrose Chemical Corporation of California, March 12, 2004.

TABLE 1  
Additional Production and WRD Cluster/Monitoring Wells In the Area of the Dual Site Groundwater Modeling Domain

Well Identification	Owner Name	Year Constructed	Log Available	Coordinates		Ref. Point Elev. (Feet)	Depth (Feet)	Screened Interval (Depth, Ft.)	Unit	Use Status	Water Level Data	Well Production Data	Water Quality Data
				X	Y								
3S13W30Q01			No			32.7	80	Unknown		Destroyed 12/86	Yes (see Table 2)	No	?
3S13W31B07	Mayflower Nurseries		No			27.9	370	365-370	L	Production Well	Yes (see Table 2)	No	?
3S13W31M01	Maxwell Zeigler		No	33.86444	-118.28889	35.6	644	550-644	S	Production Well (no production since 1990)	Yes (see Table 2)	No	?
3S13W32E02			No			26	579	Unknown		Production Well	Yes (see Table 2)	No	?
3S14W25K06	Mayflower Nurseries		No	33.86945	-118.29778	33.8	120	112-120		Production Well (no production since 1993)	Yes (see Table 2)	No	?
3S14W25P04	Southern California Water Company (Dalton1)	1948	Yes-DWR	33.87369	-118.3026	22.5	751	544-751	S	Production Well (Active)	Yes (see Table 2)	Yes (see Table 2)	?
3S14W25K07S Gardena 2 Cluster	Water Replenishment District of Southern California (WRD)	2002	Yes-WRD	33.8765221	-118.2999326	26.74		1275-1335	LSP	Observation Well	Yes (see Table 2)	No	Yes (see Table 3)
								770-790	S	Observation Well	Yes (see Table 2)	No	Yes (see Table 3)
								610-630	S	Observation Well	Yes (see Table 2)	No	Yes (see Table 3)
								340-360	Lyn	Observation Well	Yes (see Table 2)	No	Yes (see Table 3)
								235-255	G/G	Observation Well	Yes (see Table 2)	No	Yes (see Table 3)
4S13W16J05	Atlantic Richfield/BP		No	33.82343	-118.24017					Production Well (Active)	No	Yes (see Table 2)	?
4S14W24A01		1929	Yes-DWR			55	563	245-563	G/G, L, S	Production Well	Yes (see Table 2)	No	?

KEY

LSP = Lower San Pedro

S = Silverado

Lyn = Lynwood

G/G = Gage/Gardena

DTW = Depth to Water (feet)

GWE = Groundwater Elevation (feet)

DWR = Department of Water Resources

WRD = Water Replenishment District

TABLE 2  
Water Level Data & Well Production Data

Well Identification	Owner Name	Unit	Water Level Data		Well Production Data (acre feet)	
			Date	Measurement	Year	Measurement
3S13W30Q01			5/1/1986	DTW 44.1		No
3S13W31B07	Mayflower Nurseries	L	10/1/1981	GWE -40.6		No
3S13W31M01	Maxwell Zeigler	S	10/1/1982	GWE -64.4		No
3S13W32E02			4/1/1974	GWE -45		No
3S14W25K06	Mayflower Nurseries		4/1/1978	DTW 62.4 GWE -28.6		No
3S14W25P04	Southern California Water Company (Dalton1)	S	3/1/2004	DTW 84 GWE -61.5	1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 Jan	398.64 719.64 844.78 949.21 736.84 904.41 899.53 749.19 623.19 48.27
3S14W25K07S Gardena 2 Cluster	Water Replenishment District of Southern California (WRD)	LSP	1/2/2003	GWE-49.86		No
			3/27/2003	GWE-49.62		
			6/30/2003	GWE-49.83		
			9/30/2003	GWE-50.25		
		S	1/2/2003	GWE-67.27		No
			3/27/2003	GWE-65.61		
			6/30/2003	GWE-66.71		
			9/30/2003	GWE-65.55		
		S	1/2/2003	GWE-67.5		No
			3/27/2003	GWE-65.8		
			6/30/2003	GWE-66.86		
			9/30/2003	GWE-65.67		
		Lyn	1/2/2003	GWE-29.38		No
			3/27/2003	GWE-29.14		
			6/30/2003	GWE-30.34		
			9/30/2003	GWE-30.46		
		G/G	1/2/2003	GWE-14.45		No
			3/27/2003	GWE-14.14		
			6/30/2003	GWE-24.33		
			9/30/2003	GWE-15.4		
4S13W16J05	Atlantic Richfield/BP				1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 Jan	1818.83 3160.37 2706.11 2657.84 2439.58 1749.10 2160.33 1570.77 1760.49 151.07
4S14W24A01		G/G, L, S	4/1/1979	GWE -53.8		No

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**TABLE 3**  
**Water Quality Data for Gardena 2 Cluster**

Water Quality Constituent	Units	MCL	101804 Gardena #2 Zone 1 5/29/2003	101805 Gardena #2 Zone 2 5/29/2003	101806 Gardena #2 Zone 3 5/29/2003	101807 Gardena #2 Zone 4 5/29/2003	101808 Gardena #2 Zone 5 5/29/2003
<b>General Minerals</b>							
Total Dissolved Solid (TDS)	mg/l	1000	350	330	330	230	330
Cation Sum	meq/l		5.67	5.18	5.1	3.94	5.19
Anion Sum	meq/l		6.18	5.44	5.28	4.15	5.47
Iron, Total, ICAP	mg/l	0.3	ND	ND	ND	ND	ND
Manganese, Total, ICAP/MS	ug/l	50	43	57	81	43	73
Turbidity	NTU		4.6	2.1	1.9	0.25	7
Alkalinity	mg/l		290	185	181	177	198
Boron	mg/l		0.34	0.18	0.12	0.1	0.14
Bicarbonate as HCO <sub>3</sub> ,calculated	mg/l		352	225	220	215	241
Calcium, Total, ICAP	mg/l		15	34	44	30	44
Carbonate as CO <sub>3</sub> , Calculated	mg/l		5.75	2.32	1.43	2.21	2.48
Hardness (Total, as CaCO <sub>3</sub> )	mg/l		61.7	130	159	111	151
Chloride	mg/l	500	13	22	22	21	36
Fluoride	mg/l	2	0.24	0.27	0.36	0.28	0.3
Hydroxide as OH, Calculated	mg/l		0.04	0.03	0.02	0.03	0.03
Langelier Index - 25 degree	None		0.68	0.64	0.54	0.56	0.78
Magnesium, Total, ICAP	mg/l		5.9	11	12	8.7	10
Mercury	ug/l	2	ND	ND	ND	ND	ND
Nitrate-N by IC	mg/l	10	ND	ND	ND	ND	ND
Nitrite, Nitrogen by IC	mg/l	1	ND	ND	ND	ND	ND
Potassium, Total, ICAP	mg/l		5.1	5.3	3.5	3	3.1
Sodium, Total, ICAP	mg/l		99	56	42	38	48
Sulfate	mg/l	250	ND	53	49	ND	23
Surfactants	mg/l		ND	ND	ND	ND	ND
Total Nitrate, Nitrite-N, CALC	mg/l		ND	ND	ND	ND	ND
Total Organic Carbon	mg/l		3.7	0.7	0.5	0.6	ND
Carbon Dioxide	mg/l		2.8	2.84	4.4	2.71	3.04
<b>General Physical</b>							
Apparent Color	ACU	15	25	5	3	5	5
Lab pH	Units		8.4	8.2	8	8.2	8.2
Odor	TON	3	8	4	8	4	8
pH of CaCO <sub>3</sub> saturation(25C)	Units	1600	7.722	7.561	7.459	7.635	7.42
pH of CaCO <sub>3</sub> saturation(60C)	Units	5	7.3	7.1	7	7.2	7
Specific Conductance	umho/cm		580	533	517	399	537
<b>Metals</b>							
Aluminum, Total, ICAP/MS	ug/l	1000	26	ND	ND	ND	ND
Antimony, Total, ICAP/MS	ug/l	6	ND	ND	ND	ND	ND
Arsenic, Total, ICAP/MS	ug/l	50	ND	ND	ND	ND	1
Barium, Total, ICAP/MS	ug/l	1000	23	16	17	61	78
Beryllium, Total, ICAP/MS	ug/l	4	ND	ND	ND	ND	ND
Chromium, Total, ICAP/MS	ug/l	50	ND	ND	ND	ND	ND
Hexavalent Chromium (Cr VI)	mg/l		ND	ND	ND	ND	ND
Cadmium, Total, ICAP/MS	ug/l	5	ND	ND	ND	ND	ND
Copper, Total, ICAP/MS	ug/l	1000	ND	ND	ND	ND	ND
Lead, Total, ICAP/MS	ug/l		ND	ND	ND	ND	ND
Nickel, Total, ICAP/MS	ug/l	100	ND	ND	ND	ND	ND
Selenium, Total, ICAP/MS	ug/l	50	ND	ND	ND	ND	ND
Silver, Total, ICAP/MS	ug/l	100	ND	ND	ND	ND	ND
Thallium, Total, ICAP/MS	ug/l	2	ND	ND	ND	ND	ND
Zinc, Total, ICAP/MS	ug/l	5000	ND	ND	ND	ND	ND
<b>Volatile Organic Compounds</b>							
Trichloroethylene (TCE)	ug/l	5	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/l	5	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ug/l	6	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/l	6	ND	ND	ND	ND	ND
trans-1,2-Dichloroethylene	ug/l	10	ND	ND	ND	ND	ND
Chloroform (Trichloromethane)	ug/l	100	ND	ND	ND	ND	ND
Carbon Tetrachloride	ug/l	0.5	ND	ND	ND	ND	ND
1,1-Dichloroethane	ug/l	5	ND	ND	ND	ND	ND
1,2-Dichloroethane	ug/l	0.5	ND	ND	ND	ND	ND
Fluorotrichloromethane-Freon11	ug/l	150	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l		ND	ND	ND	ND	ND
n-Propylbenzene	ug/l		ND	ND	ND	ND	ND
m,p-Xylenes	ug/l	1750	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	5	ND	ND	ND	ND	ND
Toluene	ug/l	150	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ug/l		ND	ND	ND	ND	ND
MTBE	ug/l		ND	ND	ND	ND	ND
Benzene	ug/l	1	ND	ND	ND	ND	ND
Ethyl benzene	ug/l	700	ND	ND	ND	ND	ND
sec-Butylbenzene	ug/l		ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	ug/l		ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ug/l	200	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ug/l	1	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ug/l	5	ND	ND	ND	ND	ND
1,1-Dichloropropene	ug/l		ND	ND	ND	ND	ND

TABLE 3  
Water Quality Data for Gardena 2 Cluster

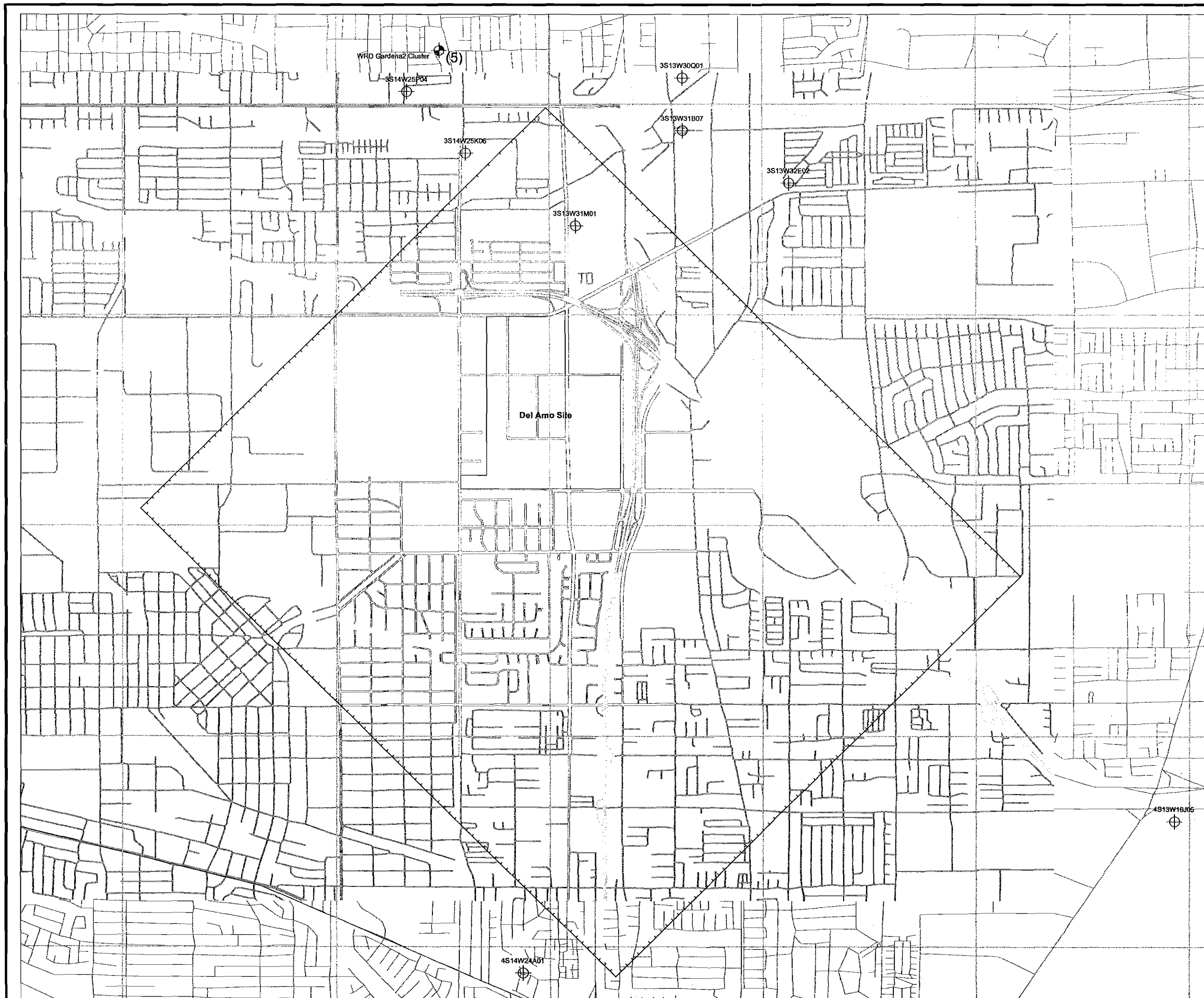
				101804	101805	101806	101807	101808
Water Quality Constituent	Units	MCL		Gardena #2	Gardena #2	Gardena #2	Gardena #2	Gardena #2
				Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Constituent				5/29/2003	5/29/2003	5/29/2003	5/29/2003	5/29/2003
1,2,3-Trichlorobenzene	ug/l			ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ug/l			ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ug/l	70		ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ug/l			ND	ND	ND	ND	ND
1,2-Dichloropropane	ug/l	5		ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ug/l			ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ug/l			ND	ND	ND	ND	ND
1,3-Dichloropropane	ug/l			ND	ND	ND	ND	ND
2,2-Dichloropropane	ug/l			ND	ND	ND	ND	ND
2-Butanone (MEK)	ug/l			ND	ND	ND	ND	ND
4-Methyl-2-Pentanone (MIBK)	ug/l			ND	ND	ND	ND	ND
Bromobenzene	ug/l			ND	ND	ND	ND	ND
Bromochloromethane	ug/l			ND	ND	ND	ND	ND
Bromodichloromethane	ug/l	100		ND	ND	ND	ND	ND
Bromoform	ug/l	100		ND	ND	ND	ND	ND
Bromomethane (Methyl Bromide)	ug/l			ND	ND	ND	ND	ND
Chlorobenzene	ug/l	70		ND	ND	ND	ND	ND
Chlorodibromomethane	ug/l	100		ND	ND	ND	ND	ND
Chloroethane	ug/l			ND	ND	ND	ND	ND
Chloromethane(Methyl Chloride)	ug/l			ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	ug/l	0.5		ND	ND	ND	ND	ND
Dibromomethane	ug/l			ND	ND	ND	ND	ND
Freon 12	ug/l							
Hexachlorobutadiene	ug/l			ND	ND	ND	ND	ND
Naphthalene	ug/l			ND	ND	ND	ND	ND
n-Butylbenzene	ug/l			ND	ND	ND	ND	ND
o-Chlorotoluene	ug/l			ND	ND	ND	ND	ND
o-Dichlorobenzene (1,2-DCB)	ug/l	600		ND	ND	ND	ND	ND
o-Xylene	ug/l	1750		ND	ND	ND	ND	ND
p-Chlorotoluene	ug/l			ND	ND	ND	ND	ND
p-Dichlorobenzene	ug/l	5		ND	ND	ND	ND	ND
p-Isopropyltoluene	ug/l			ND	ND	ND	ND	ND
Styrene	ug/l	100		ND	ND	ND	ND	ND
tert-Butylbenzene	ug/l			ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	ug/l			ND	ND	ND	ND	ND
Vinyl chloride (VC)	ug/l	0.5		ND	ND	ND	ND	ND
Perchlorate	ug/l			ND	ND	ND	ND	ND
Radon	pCi/l			ND	ND	60	75	140
Trichlorofluoroethane (Freon 113)	ug/l			ND	ND	ND	ND	ND

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0 2500 5000  
Scale in Feet

#### EXPLANATION

- 3S13W32E03 Production Well  
(California Well Identification No.)
- WRD Gardena2 Cluster Monitoring Well  
(5) (Number of units monitored)
- Boundary of Model Domain

FIGURE 1

Production and other Water Wells  
near Dual Site  
Groundwater Model Domain

Initial Groundwater  
Remedial Design

**URS**